CLAIMS

Sub B1

1. Process for relaying IP frames in the form PDU application frames within an ATM switch with distributed architecture and egress storage comprising a management module and several ingress (7i...7k) and egress (7j) junctors having a routing emulation function ensuring IP frame routing between the users of various ELAN media and represented in each of these ELANs by its router LEC module, characterized in that it consists in offloading the frame relay function into the ATM layer of the junctors by examining the first cell of each PDU application frame arriving at an ingress junctor (7i...7k) so as to extract therefrom the IP address of the destination, by searching in a cache table (9i...9k) of the junctor for a pair (logical path, outbound direction) opposite the relevant IP address and opposite the ingress logical path and by using the translation obtained for all the cells of the PDU application frame, the cache table (9i...9k) being updated by virtue of the routing information originating from the routing emulation function residing in the management module (4) and in that it consists in transmitting a request to update the cache (9i...9k) to the management module (4) if the sought-after IP address is not located thereat or if the information opposite this address is too old.

2. Process according to Claim 1, characterized in that it consists in performing a double translation, a first translation in each ingress junctor (7i...7k) so as to transform the logical path number VLi (UX) between the user UX and the LEC module of the router relating to the ELAN to which the user UX belongs and the IP address of the destination of each application frame originating from the user (UX) applied to the ingress of a junctor (7i...7k) into an internal index number VM (UX, UY) and an identifier number L_j of an egress junctor (7j), a second translation in each egress junctor (7j) so as to transform the index number

VM (UX, UY) into a logical path number VLi (UY) associated in the egress junctor (7j) with the direct connection between the user UY and his corresponding router LEC A modulend a queue number for the egress junctor (7j) allocated to the pair (UX, UY).

3. Process according to any one of Claims 1 and 2, characterized in that it consists:

- in allocating in each egress junctor (7j) a queue (11_n) for each user pair, the second of whom is attached to the relevant junctor, that is to say that the direct connection between himself and the corresponding router LEC module passes through this junctor,

- in dynamically allocating the internal indices and the egress queues (11_n) in conjunction with the updating of the ingress translation caches (9i...9k),

- and in using a mode for arbitration in PDU mode between the various queues so as to ensure the transmission of the cells without interleaving of the PDU frames.

Add B7